

WASHRIBN & MOHN

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THE

Utility, Efficiency and Economy

OF

BARB FENCE.

A BOOK FOR

The Farmer, the Gardener and the Country Gentleman.

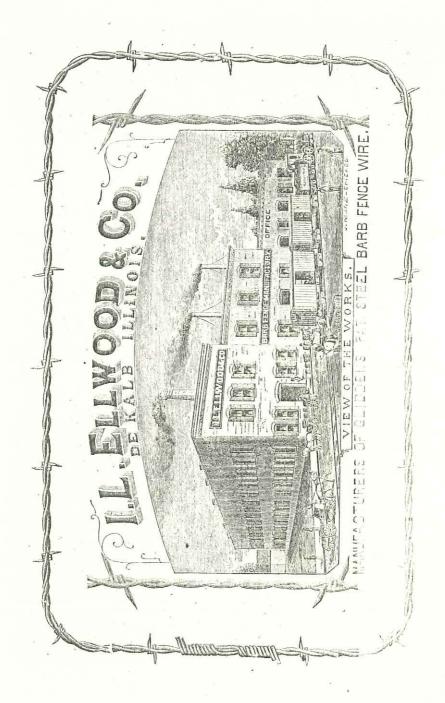
Manufacturers for the United States,

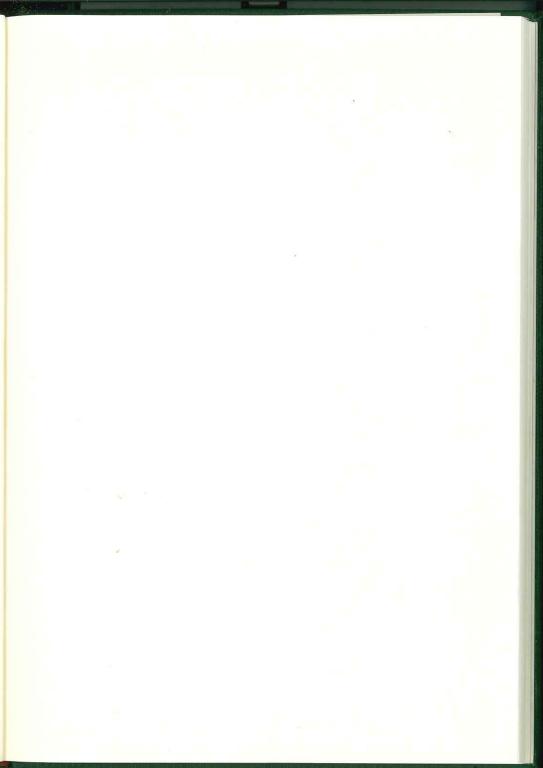
WASHBURN & MOEN MANUFACTURING CO.

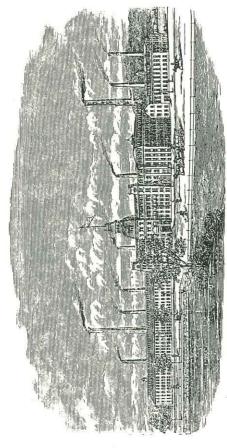
L WORCESTER, MASS. 1

I. L. ELLWOOD & CO.

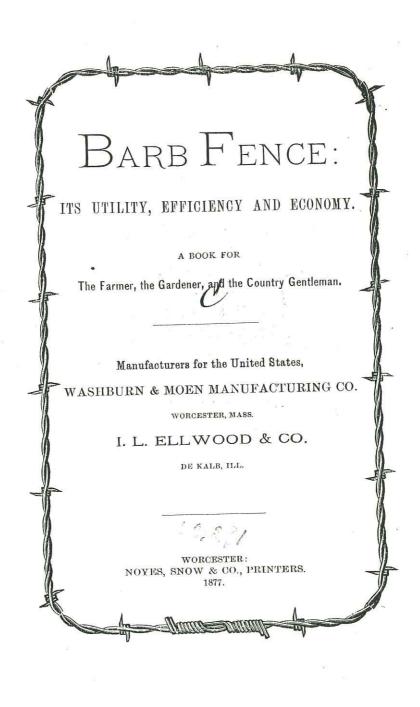
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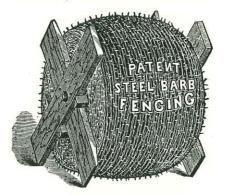


WASHBURN & MOEN MFG. CO.-Front View of Grove Street Works.





SPOOLED, READY FOR SHIPMENT.



Put up in 50 and 100 lb. Spools.



T is characteristic of great and useful inventions that their simplicity and perfect adaptation to the desired end at once suggest the question, "Why was not that thought of before?"

Such is the question suggested by the Barb Fence in all its forms.

For a quarter of a century the great problem among the farmers of the country, especially in the sparsely wooded regions of the West, has been, "What makes the most economical and cheapest fence?" For that length of time the answer of the western farmer has been, "Wire; plain wire, fastened to posts eight feet apart, four or five lines deep, by staples." This material for fencing, then, has been the chief reliance for that long term of years, in all our prairie states, and its merits, as well as its defects, have become fully known.

WASHBURN & MOEN MANUFACTURING Co. were the first to introduce Plain Wire for fencing, into the

West, say twenty-five years ago. It is estimated that during that time 150,000 miles of plain wire fence have been put up, three wires deep, or 450,000 miles of single wire!

The MERITS of Plain Wire as a Material for Fence.

First. Cheapness.

SECOND. Ease and quickness with which it can be put up.

THIRD. Non-combustible in case of prarie fires.

FOURTH. Not the occasion of snow-drifts. Cannot be overloaded with snow. Is unaffected by wind or by flood.

The DEFECTS of Plain Wire as a Material for Fence.

First. Liability to break, being but one strand.

SECOND. Not readily seen, on account of its color and small size.

THIRD. Cattle, from familiarity with it, learn to press against or crowd through and break it.

FOURTH. Small animals pass through it without any difficulty.

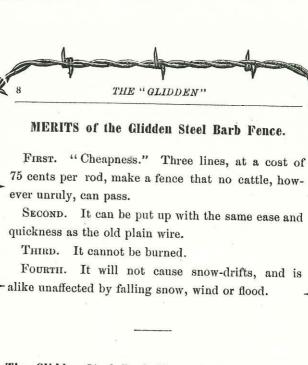
FIFTH. Being but one strand it has no power of adapting itself to changes of temperature, and is therefore constantly breaking or "sagging" loosely between the posts.

Such have been the well-known characteristics of the Plain Wire fence for many years, and many havebeen the attempts by thoughtful persons, during that time, to overcome its defects, and to raise, by some new device, this strong, cheap form of fence to the dignity of something fully answering the purpose.

The first successful attempts in this direction were made by L. B. Smith, of Kent, Ohio, and by Wm. D. Hunt, of Scott, N. Y., both in 1867. They were followed by Michael Kelley, of New York City, in 1868, and by J. F. Glidden, of DeKalb, Ill., in 1873.

All these parties took out patents, which have been purchased and are controlled by Washburn & Moen Manufacturing Co., of Worcester, Mass., and by I. L. Ellwood & Co., of DeKalb, Ill., and the devices and improvements covered by those patents, when embodied in the Glidden Steel Barb Fence, accomplish the long sought desideratum.





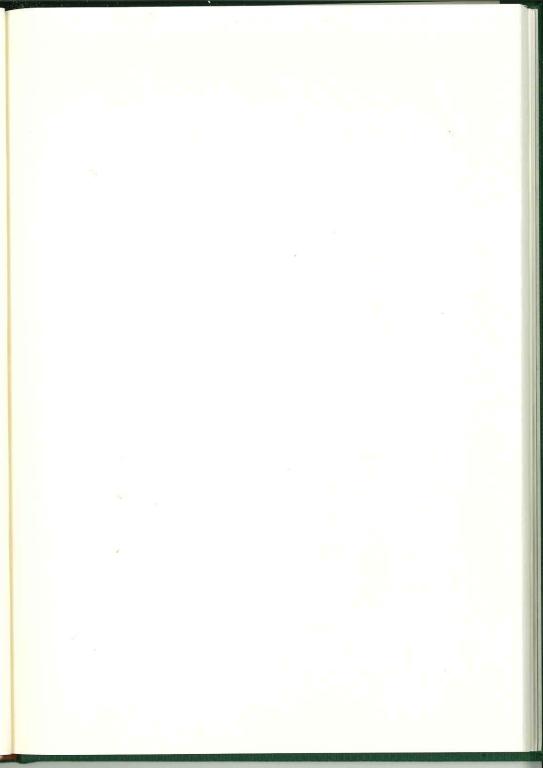
The Glidden Steel Barb Fence transforming the Defects of Plain Wire into Advantages.

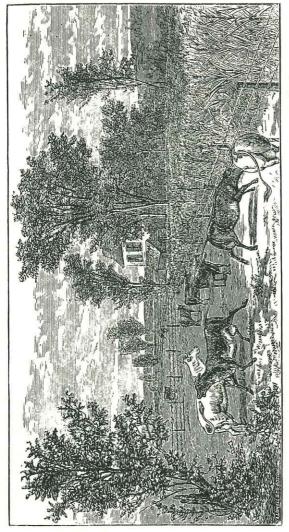
FIRST. It is Steel, and of two strands, and will hold 1400 pounds to each line of wire, without breaking, or 4200 pounds in a fence of three lines; hence practically cannot be broken.

SECOND. Is easily seen, each line being composed besides the two strands, of barbs projecting at right angles.

THIRD. Cattle, after once coming in contact with the Barb Fence, ever after avoid it.

Transa minut





BARB FENCE protects the most tempting Crops from the most unruly Cattle.

FOURTH. Small animals do not dare to pass under or through a fence bristling with sharp barbs or thorns.

FIFTH. Being of two strands twisted together, it ever remains straight and firm on the posts, through all temperatures, after once being strained up into place.

From the foregoing it will be seen that, at small expense and in a few hours time, after the posts are set:

The Farmer can perfectly protect his most tempting crops from the most unruly cattle.

The *Professional* man or *Mechanic*, living in villages, can throw around his vegetable, fruit or flower garden, a barrier absolutely impassable by man, child, beast or animal.

The Connoisseur in any of the choice productions of nature, and living in the surbubs of town or village, can, by the adoption of the Barb Fence, be sure of the safety of his favorites from any foe from without.

The Barb Fence is the only means for obliging every body and every thing to enter a man's premises by the same way that he himself enters.

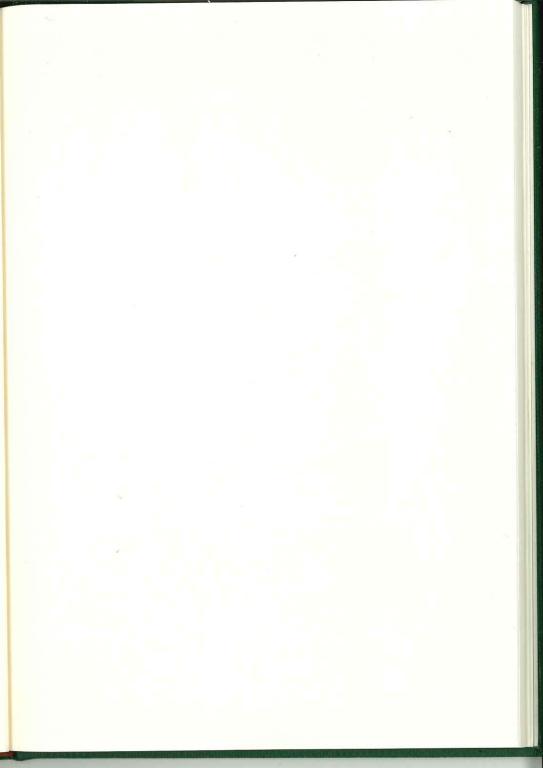
The adoption of the Barb Fence is the only method by which an owner can be certain that no man or beast is on his premises without his wish or knowledge.

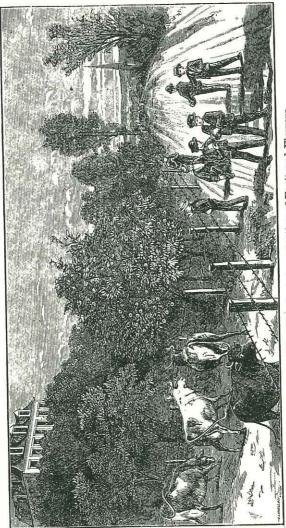
If beauty is desired in connection with utility, let the Barb Fence of three or four strands form a trellis for any creeping vine, and behold! an imperishable thorn hedge.

Having, we trust, demonstrated the utility of the Barb Fence (and we beg leave further to refer to the testimonials in the latter part of this pamphlet), we present the following list, showing the cost of the Glidden Steel Barb Fence, in various combinations, as compared with other fences in general use:

Cost of Various Styles of Fence.

	Narrow S	Slat P	icket]	Fence,	-	-	\$6.25	per rod.
	Wide		66	"	-	-	5.32	
	Common	Stone	e Wall	, -	1 17 7		3.00	"
_	"			d Fence	е,	ñ=	2.00	
	٤.	Split-Rail,		66	-	-	2.00	
	Virginia	≜ 2:		"	-	-	1.50	66
	Glidden	Steel	Barb	Fence,	four	wires,	.84	
	"	".	66	66	three		.66	"
	. "	"		66	two	"	.48	66
5								1





BARB FENCE, -The absolute protection of Fruit and Flowers.

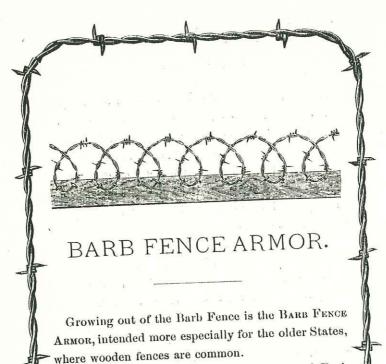
For the Barb Fence this is allowing 18 cents per pound, or rod (which is the same thing), for each line, or "wire" of fence, and 20 cts. each for posts, six posts for every ten rods of finished fence.

Posts can be put in every ten feet, and then a four line or "wire" Glidden Barb Fence will cost but \$1.08 per rod, or two-thirds the cost of the cheapest, rudest wooden fence.

There is no end to the variety of combinations that can be formed with the Barb Fence and other styles of fence; say, one line or "wire" of Barb Fence, strung on any wooden fence, makes a structure cattle will not molest. One or two barbed lines or "wires" put up with the old plain wire, makes a magical change in the efficiency of the whole. Etc.

To close these remarks as far as description is concerned:

The Barb Fence in principle combines all the utility of the *thick-set hedge*, without occupying any ground except for the posts, with the durability and staunchness of Iron and Steel.



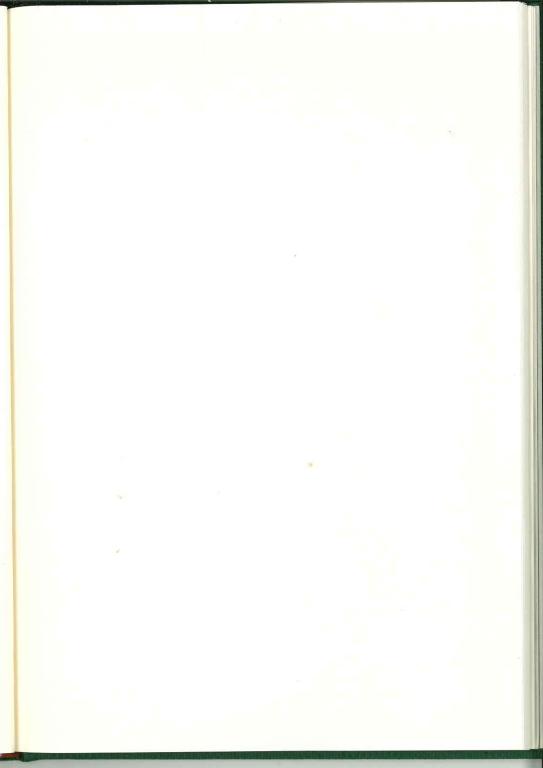
This consists of convolved circles of Steel Barb Fencing, fastened upon strips of wood twelve feet long, which can be secured upon the upper edge of any wooden fence, making by the combination:

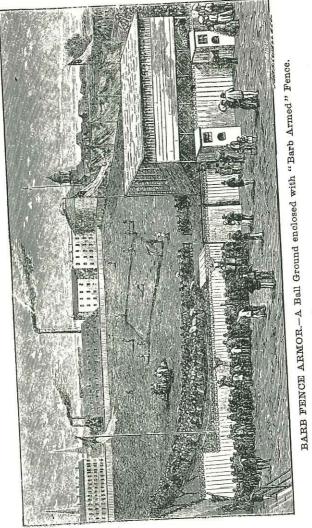
First. A fence absolutely impassable by man or beast.

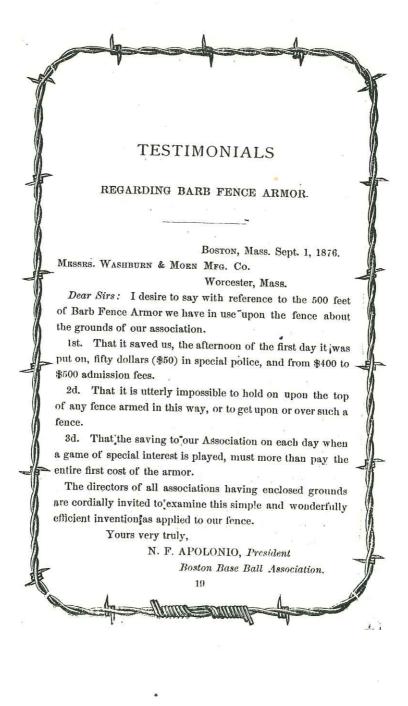
SECOND. A fence no person can sit upon.

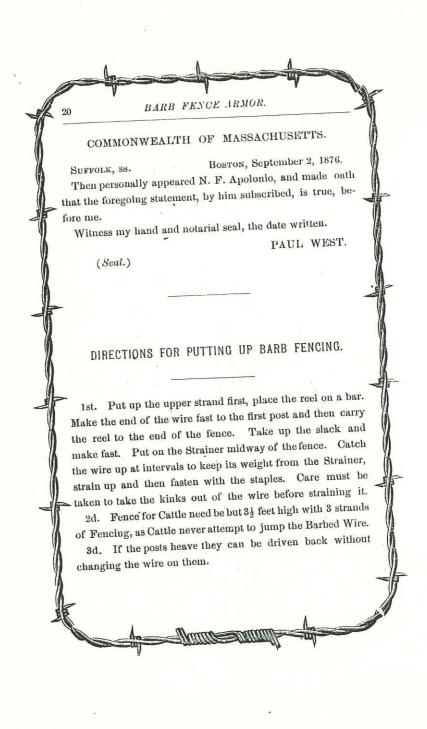
THIRD. A fence no animal will rub against.

FOURTH. The transformation of an ordinary wooden fence into a formidable barrier at a small additional cost.











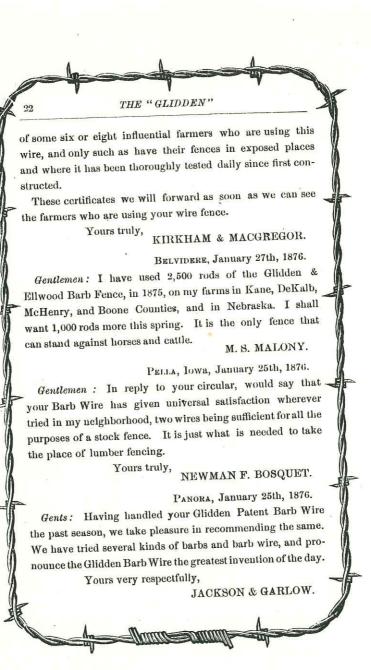
The following are testimonials sent us spontaneously from different parts of the country, where the Barb Fence has been introduced.

CENTREVILLE, Iowa, January 25th, 1876.

Gents: Yours of the 20th inst. at hand. In reply we would state that we commenced handling the Glidden Barb Fence in August last, and as it has given entire satisfaction, we recently ordered a car-load for the spring trade. After a careful examination and comparison of your wire with other barbed wires, we have no hesitancy in saying that we regard the Glidden patent as being decidedly the best for the farmer to use and the most saleable for the merchant.

With two or three exceptions the farmers in this section have constructed their fences with two strands, viz: the first strand about 18 inches above the ground, and the second wire two feet above the first, setting the posts two rods apart, and we have yet to hear of a single instance where it has not answered the purpose intended.

We can procure a testimonial from every farmer to whom we have sold your wire, but as a few will doubtless answer as well as a large number, we will only send you the certificates



SYCAMORE, Ills., December 31st, 1875.

The year 1875 is this day ended, and of the useful improvements introduced, we doubt if there is one among them of more real value than your Steel Barb Fence Wire. Last spring we bought our usual stock of the old style smooth fence wire, and reluctantly took one spool of the Glidden Barb Wire. In a short time we were compelled to order again, after which, as you remember, we ordered in ton lots.

An examination of our season's business, to our astonishment, reveals the fact that we have sold four times the quantity of the Barb Wire that we have of the smooth.

Fencing lumber has been sold this season at the unusually low price of fifteen dollars per thousand, and yet the demand for your Barb Wire constantly increases. In our opinion the sale of Barb Wire, now in its infancy, will in a short time supersede all other material for fencing. You will, we trust, continue to give us the exclusive sale in this city, and we guarantee to more than treble our last season's orders.

Yours,

R. ELLWOOD & CO.

FAIRBURY, Neb., January 28, 1876.

Gentlemen: I have a pasture of twenty-five acres that I enclosed last season with two wires, and I have found it a success. I am well pleased with it, and say I believe it to be all that you claim, a cheap and reliable fence, and a necessity in this country. I have just ordered more for another field, and expect, if the coming season is prosperous, to fence in my entire farm another year. I can cheerfully recommend it to others.

Respectfully yours,

J. C. BEOR.





CEDAR RAPIDS, la., June 5th, 1875.

Gents: Having sold several tons of your Barb Wire this spring, we take pleasure in handing you the following certificate.

Yours,

HIGLEY & BRO.

Gents: We, the undersigned, join together in recommending the Glidden Patent Barb Fence Wire, which we bought of you this spring. We believe it to be just the fence that we need; we are satisfied that it will turn all kinds of stock at all seasons of the year; we have no hesitancy in giving it our unqualified approval.

> J. S. McCLURE, DAVID DONOR,

THOMAS GAINOR, GODFREN McDOWELL, JOHN L. ROGERS, DAVID McKINNON, JONATHAN LORD.

Oswego, Ills., June 3, 1875.

Gents: I desire to say to you that I have sold the Barb Wire you sold me last month. It was the first brought to our county. It gives perfect satisfaction. Mr. David Goudy, one of the largest stock dealers in the county, and a man who always buys the best, took the major part of it. He says, tell the company that I have only two wires on the posts, and they are one rod apart, and it is all that is needed for cattle of all ages and sizes, from a yearling calf to a fouryear-old bullock-in fact, all that have seen it pronounce it just the thing for stock fencing. I have not heard a man find fault with it. I expect to sell a large quantity during the summer and fall.

Yours truly,

A. NEWTON.

Janua Dallan

LELAND, Ills., June 2, 1875.

Gents: Your Barb Fence is filling the place of all other fences in this country, and the farmers who are using it pronounce it the BEST fence to turn stock that they have ever seen, which my largely increasing sales of this wire will testify.

Yours truly,

A. H. DALE.

Dixon, Ills., June 4, 1875.

Gents: Yours of June 1st is received. In reply, I would say that all parties I have sold wire to are well pleased with it. I have never sold one article that gives as good satisfaction as this wire. You will need to keep a good supply on hand. I think I will sell a good deal of it this year.

Yours respectfully,

JACOB EBINGER.

Iowa City, Iowa, January 24th, 1876.

Gents: About the first of March we shall want to stock up with your Barb Wire. It needs no recommendation from us, for where once used it will find ready sale.

Yours truly,

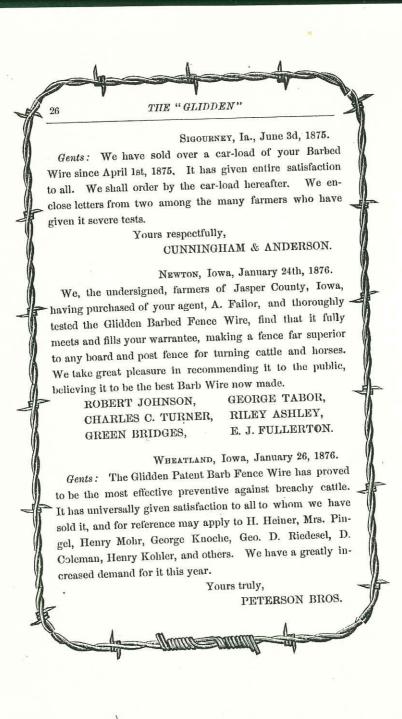
SHEPPARD & HESS.

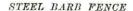
MASONVILLE, Iowa.

I think the Glidden Patent Fence the BEST fence for turning horses and cattle I ever saw. I had a good five-wire fence, but the cattle would break through into the corn. I put on one of Glidden's barbed wires, and have never been troubled since.

Respectfully yours,

S. T. OVIATT.





MOLINE PLOW WORKS, OFFICE OF DEERE & Co.

MOLINE, Ills., June 15th, 1875.

Dear Sir: In reply to your letter of inquiry in regard to the Barb Wire Fence, I would say that I find it a complete success, as no stock will will go through it, and I consider it the best and cheapest fence in use. I am waiting for that last ordered, and shall use a large quantity after harvest.

Truly yours,

JOHN DEERE.

FAIRBURY, Neb., January 28, 1876.

Gentlemen: I have sold your Barb Wire, and find it gives perfect satisfaction, and is proving to be just the thing in this country, where fence material is so costly. I believe the coming season a large quantity will be used here. Our farmers do not feel able as yet, but if this is a good season many who are now anxious to have it will be able to do so. I have an order to-day from J. C. Beor for 300 lbs. Please ship it as soon as convenient. He is now setting his posts. He is one of our best farmers.

Respectfully yours,

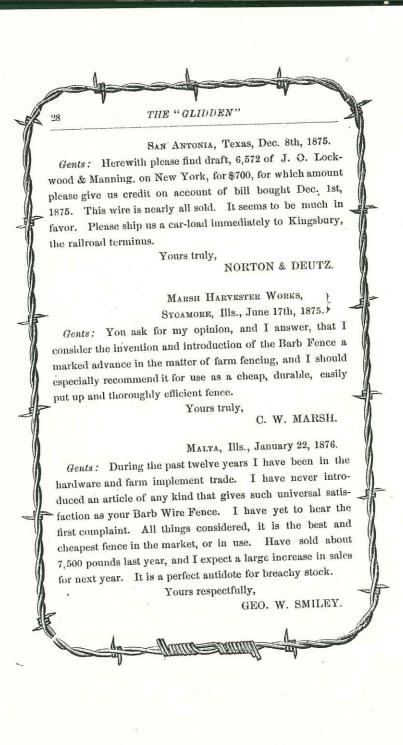
EDWARD E, ELDRIDGE.

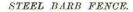
SIGOURNEY, Ia., June 3d, 1875.

Gents: I have 640 acres inclosed with the Glidden Barbed Wire, and have over three hundred head of horses and cattle in the enclosure. There has been no breaking in or out by them. I have posts two rods apart, and think it the best and cheapest fence I have ever had any experience with.

Very truly yours,

NORMAN W. CHURCHILL.





INDEPENDENCE, Iowa, Nov. 4, 1875.

Having sold largely of your Patent Barb Wire this fall, I take pleasure in handing you the following recommend.

R. R. PLANE.

We, the undersigned, having used the Glidden Patent Barb Fence Wire, do hereby say that we can recommend it to any one in want of a good fence, and consider it the best fence on our farms, and the only fence that will successfully stop stock.

GEO. BROOKS,
GEO. KEIFER,
JOHN GUTCHER,
HAWLEY SMITH,
THOMAS BARR,
GEO. HOVEY,
JOHN CAMPBELL,
MART OZIAS,
JOHN PELLY,
J. K. DUNLAP.

Washington, Iowa, June 15, 1875.

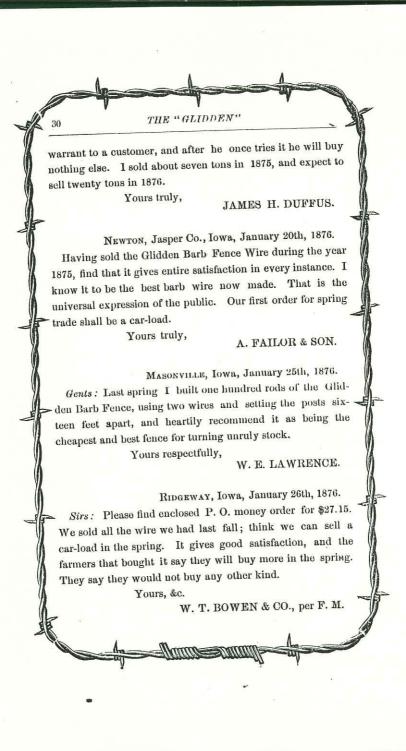
Sirs: We have sold, since April 1st, nearly a car-load of your Barbed Wire. It is highly recommended by all who have seen it, and more especially by those who have used it. We think the demand will be so great after harvest we will order by the car-load instead of ordering by the ton.

Yours truly,

SARGENT & WHITCOMB.

Maloolm, Iowa, January 24th, 1876.

Sirs: Your Glidden Patent Steel Barbed Fence Wire is a perfect success. It sells easy and gives entire satisfaction. The profit to dealers is small, but it is something you can



STOCKTON, Cal., April 13th, 1876.

Dear Sirs: Our sales of "Gliddens Steel Barb Fence Wire," notwithstanding the "Cheap John" imitation, have been very satisfactory. In all cases our customers have been fully satisfied. It makes the cheapest and most durable fence in known use, standing wind, flood and fire, and is perfectly stock proof. As soon as farmers and stock raisers fully comprehend the "deception" practiced on them by manufacturers of the so called steel wire fence, we think no other than the "Glidden Patent" will be sold. The manager of our Cressey store has had a similar satisfactory experience in sale of wire fence made by him. Will procure and send you other certificates,

Respectfully,

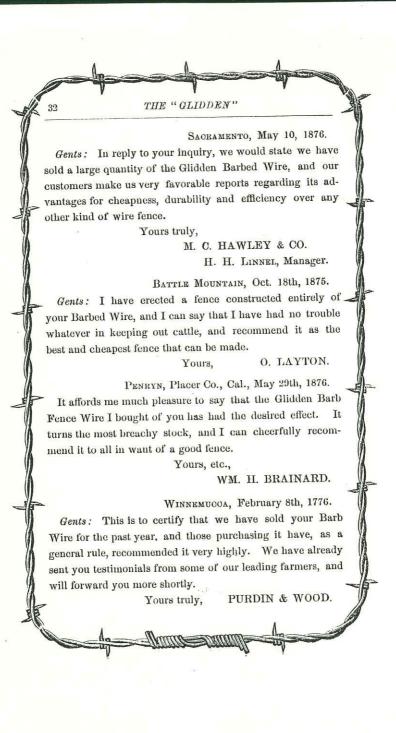
H. C. SHAW PLOW CO.

INDEPENDENCE, Cal., April 18th, 1876.

Gentlemen: Your favor of the 8th inst. duly received. We are pleased to be able to say that Barb Wire Fencing as an article of merchandise has proved to be with us a decided success, and only regret that our original order was not for twenty tons instead of two, as we should have sold it. Our farmers that have tried it are all highly pleased with it, as they can now safely stack their hay and grain on their fields or under their sheds, and know that their neighbor's cattle will not trouble it. Shipments have been received in good order, but have been delayed by the freight trains so much as to interfere with us considerable. Our prospects for future sales are very promising.

Yours truly,

J. S. ROTHSCHILD & CO.





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Plano, Tulan Co., Cal., April 19th, 1876.

Dear Sirs: While writing on business, I take pleasure in giving my opinion in regard to the "Glidden Patent Barb Wire" for fence. The wire I bought of you to was to enclose a forty-acre field sowed to wheat and barley, and the young men I entrusted to do the job in my absence enclosed a large field, hence for about twenty rods they used plain wire, two wires of the steel barbs and posts forty feet apart, three wires of the plain and posts ten feet apart. My field was surrounded by large bands of wild cattle and horses, which broke through the plain wire repeatedly, but when I constructed a strong fence in place of the plain wire, they have failed to get into the field. I consider it one-third the cheapest and much the best material for fencing I have ever It is a terror to horses and cattle. seen. practicable I intend to build several miles of this fence.

Yours truly, .

S. A. BARKER.

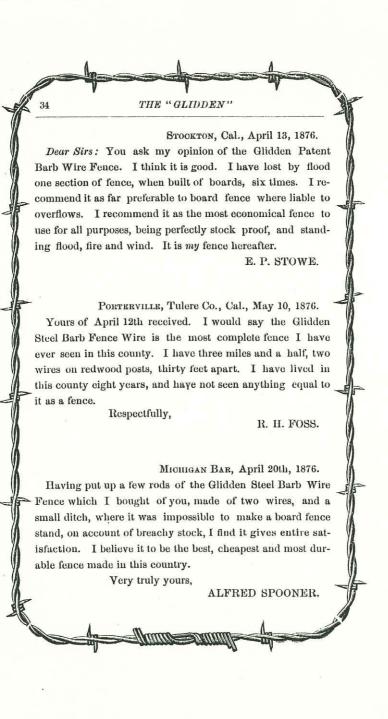
MERRITT ISLAND, Tolo Co., April 17th, 1876.

Gents: In reply to your note I am prepared to say that having given the Glidden Barbed Wire Fence a fair trial, I am satisfied that it is the most effectual fence against cattle and horses ever built; and for cheapness, facility with which it can be put up, and apparent durability, it is superior to all other fences. I regard it as one of the great inventions of the age, and in the near future it will revolutionize the whole fence question in the interest of the farmer.

Yours truly,

J. B. GREENE.

* 2



LONE PINE, Ingo Co., Cal., April 17th, 1876.

Gents: In answer to yours, we can say that we are well pleased with the Glidden Steel Barbed Wire. Two strands of wire on a ditch effectually turns breachy cattle that have been bothering for eight or ten years. Now we can go to bed at night and rest contented about our crops, and our stock not being stolen. The Indians have bothered us a great deal, in cutting our fences, and going through on horseback, letting our stock out, and outside stock in the ranch. Since we put up the wire they have not bothered any. Do not think it necessary to send certificates from this county, as the barbed wire is well known. It is cheaper fencing by one-half than any other. Think it is the greatest timber saving invention of the age.

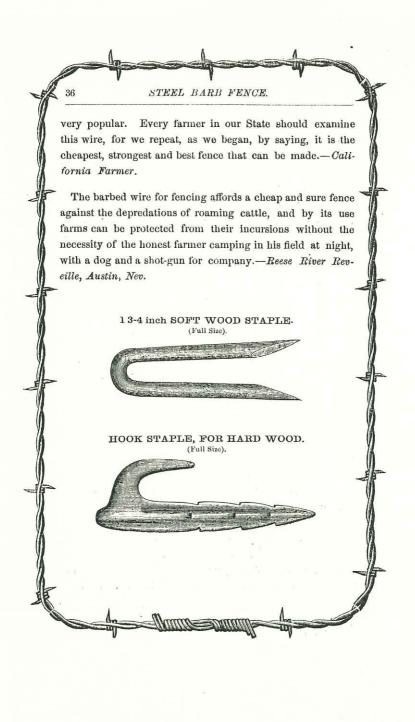
Yours very respectfully,

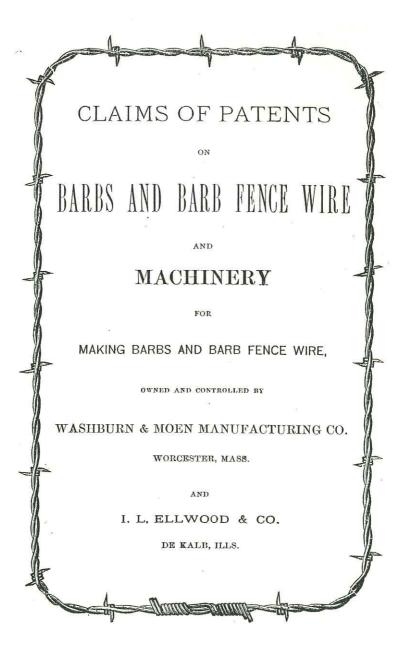
C. W. JOHNSON.

A. H. JOHNSON.

CHEAPEST, STRONGEST AND BEST.

The Barb Wire of which we have spoken several times, will prove a "Bonanza" to our farmers, for they can now protect their farms from all kinds of stock, and from all danger, and at a very small expense. The Steel Wire is firm and taut; it will not give or yield; while the barbs being doubly clinched, are also held by the wire being doubly twisted over the barb, which makes a complete fastening, so that no animal can pass, break or trample it down, while the pointed barbs show their sharp points to every animal that approaches, and are a complete defence. This wire is becoming









ON

BARBS AND BARB FENCE WIRE

Owned and controlled by

WASHBURN & MOEN MANUFACTURING CO.

WORCESTER, MASS., AND

I. L. ELLWOOD & CO.

DE KALB, ILL.

WILLIAM D. HUNT. IMPROVEMENT IN WIRE FENCES.
No. 6976. Issued July 23, 1867; re-issued March 7,
1876.

A fence-wire provided with spurs, for the purpose specified.

MICHAEL KELLY. IMPROVEMENT IN WIRE FENCES. No. 6902. Issued February 11, 1868; re-issued February 8, 1876.

1st. I claim the combination, substantially as described, of the fence wire, d, and a series of thorns, e, rigidly fixed thereto, for the purpose herein set forth.

2d. I claim a wire, d, and a series of fixed thorns thereon, in combination with supporting posts, c, substantially as and for the purpose set forth.

3d. I claim the within described fence, formed by the combination of the thorny parts, d, and e, with suitable

posts, c, and with the addition of the large rope, g, adapted for joint operation, as and for the purpose herein specified.

4th. I claim the combination, substantially as described, of two wires, dd, twisted together, and a series of thorns, e, strung upon one of said wires, and held in position by them, as and for the purpose set forth.

MICHAEL KELLY. IMPROVEMENT IN BARBED FENCE WIRES. No. 7035. Issued Nov. 17, 1868; re-issued April 4, 1876.

1st. A thorny fence wire, consisting of a flat wire, a, and barbs, b, inserted and held in holes in the wire, substantially as described.

2d. The method herein described of attaching thorns or barbs to a fence wire, by inserting the barbs in holes in the wire and compressing the wire and the barbs forcibly together, substantially as described.

MICHAEL KELLY. IMPROVEMENT IN BARBED FENCE WIRES. No. 7036. Issued Nov. 17, 1868; re-issued April 4, 1876.

1st. Thorns or barbs for wire fence, made from wire, and provided with cut beveled points at each end, substantially as and for the purpose described.

2. Thorn or barb for wire fence, pointed at each end, and having a depression about midway of its length, substantially as and for the purpose described.

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CLAIMS OF PATENTS.

LUCIUS B. SMITH. IMPROVEMENT IN WIRE FENCES. No. 7136. Issued June 25, 1867; re-issued May 23, 1876.

In a wire fence, the bent wires forming the panels, in combination with a barb, whereby the barb is prevented from moving lengthwise upon the wire, for the purpose set forth.

JOSEPH F. GLIDDEN. IMPROVEMENT IN BARBED FENCE Wires. No. 6913. Issued May 12, 1874; re-issued February 8, 1876.

In combination with a fence wire, a barb formed by a short piece of pointed wire, secured in place upon the fence wire by coiling between its ends, forming two projecting points, substantially as specified.

JOSEPH F. GLIDDEN. IMPROVEMENT IN BARBED FENCE WIRES. No. 6914. Issued May 12, 1874; re-issued February 8, 1876.

In combination with a fence wire, a barb formed of two short pieces of pointed wire, secured in place upon the fence-wire by colling between their ends, which are extended to present four points in different directions, substantially as specified.

JOSEPH F. GLIDDEN. IMPROVEMENT IN WIRE FENCES. No. 157,124. Issued Nov. 24, 1874.

A twisted fence-wire having the transverse spur-wire, d, bent at its middle portion about one of the wire strands,



a, of said fence-wire, and clamped in position and place by the other wire strand, z, twisted upon its fellow, substantially as specified.

JOSEPH F, GLIDDEN. IMPROVEMENT IN BARBED FENCE WIRE. No. 181,433. Issued August 22, 1876.

1st. The combination, with a twisted fence wire, elongated In cross-section, of a coiled barb, substantially as and for the purpose set forth.

2d. The combination, with the oval and twisted wire, A, of the coiled and barbed wire, B, substantially as specified.

CHARLES KENNEDY. IMPROVEMENT IN BARBED FEN-CES. No. 153,965, Issued August 11, 1874.

A barb, having a lateral slit or opening, g, to enable the barb to be readily attached to the fence wires, as and for the purpose specified.

CHARLES KENNEDY. IMPROVEMENT IN BARBED WIRE FENCES. No. 164,181. Issued June 8, 1875.

The fence wire in combination with a barb having body, c, both the fence wire and the body being bent together, and having bends of corresponding forms, whereby the barb is prevented from moving longitudinally, or turning, substantially as and for the purpose specified.

I. L. ELLWOOD. IMPROVEMENT IN BARBED FENCES. No. 147,756. Issued Feb. 24, 1874.

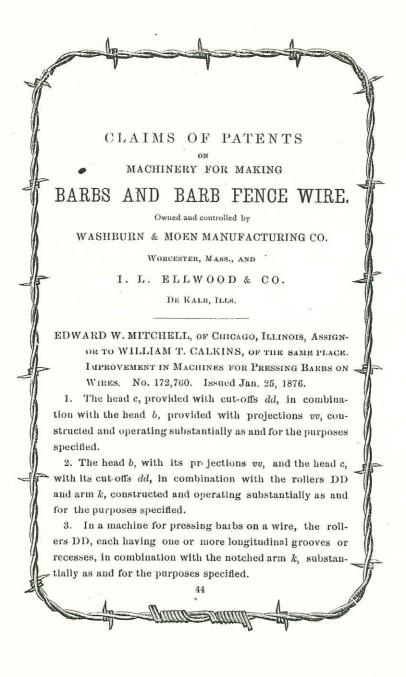
The combination, in a barbed fence, of the rail, c, provided with the loops, aa, with the brads or pickers, dd, each made of a single piece of metal, with four points, xxxx, inserted in the loops, and bent to present a sharp point above and below and on each side of the rail, substantially as and for the purpose herein set forth.

CHARLES F. WASHBURN, OF WORCESTER, MASSACHU-SETTS. IMPROVEMENT IN BARBED FENCES. No. 186,389. Issued Jan. 16, 1877.

The combination, with the top or edges of a fence or wall, of a barbed-wire guard arranged and secured in regular or irregular curves or bends, substantially as and for the purpose set forth.

HENRY W. PUTMAN, OF BENNINGTON, VERMONT. IM-PROVEMENT IN BARBED FENCE-WIRE. No. 187,172. Issued Feb. 6, 1877.

A barbed fence wire or fencing, produced or formed by the combination, with the round wire A, of wound or coiled barbs B, pressed down upon the main wire A, so as to produce spiral identations upon two sides of the wire, as and for the purpose described.



EDWARD W. MITCHELL, of CHICAGO, ILLINOIS, ASSIGNOR TO WILLIAM T. CALKINS, OF THE SAME PLACE.

IMPROVEMENT IN MACHINES FOR TWISTING WIRES.

No. 173,491. Issued Feb. 15, 1876.

The rotating frame A, hollow journal b, and roller B, in combination with shifting devices E k l, head m, and pins n, and bar p, substantially as specified.

HENRY W. PUTNAM. IMPROVEMENT IN MACHINES FOR MAKING BARBED FENCE WIRES. No. 173,667. Issued Feb. 15, 1876.

1st. In a machine for making barbed fence wire or fencing by a continuous operation, the combination with mechanism constructed and arranged to automatically feed forward the main wire at stated intervals, and mechanism constructed and arranged to automatically feed forward the cross or barb wire across the main wire at stated intervals, of mechanism for coiling the barb-wire about the main wire, and mechanism for cutting off the barb wire, and for fastening the coilbarb-wire to the main wire, substantially as described.

2d. The combination with the feed rolls, cc', provided with the feeding projections, dd, of cam, B', and lever, B', provided with holding finger, b', for the purposes stated.

3d. The combination, with the hollow rotating and reciprocating shaft, E', of the coiling finger, 18, for the purposes stated.

4th. The combination, with the hollow rotating and reciprocating shaft, E', and reciprocating head, N'', of the

projecting pin, t, and shoulders s, substantially as and for the purpose set forth.

5th. The combination, with the hollow rotating and reciprocating shaft, E, and hollow stationary bearing and main wire guide, E, of spring, d, substantially as and for the purposes set forth.

6th. The combination with the hollow shaft, E', and finger, 18, for coiling the barb-wire, of lever Q', for holding the uncut part of the barb-wire, substantially as described.

7th. The combination, with the hollow rotating shaft, E', and coiling finger, 18, of the curved guide, 22, substantially as and for the purposes set forth.

8th. The combination, with compressing lever, G', of double main wire supporting lever, TT", substantially as and for the purposes set forth.

9th. The combination, with the compressing lever, G', and supporting stand, G, of the inclined adjustable dies, FF', substantially as and for the purposes set forth.

10th. The combination, with hinged lever, M, of adjusting screw, 16, substantially as and for the purposes set forth.

11th. The combination, with levers, Q' and M', for supporting the barb-wire, K, of the cutters, N' N^{21} , for severing or cutting the wire to form the bevels, or barb points, 28, substantially as described.

12th. The combination of holding lever, B', and holding and compression lever, G', of cam, B'', and Hx, substantially as and for the purposes set forth.

13th. The combination, with barb-wire, supporting lever, M, of spring arm, 17, and flange or guide, 29, substantially as and for the purpose set forth.

Jami Mand

14th. The combination, with shafts, c" and f", of cog gear, I" and cam and blank face gear, I, of locking-lever, g, substantially as and for the purposes set forth.

15th. The combination, with the recess flange, 14, of gear, I", and stationary stand, M, of the hinged barb-wire holding lever, L, substantially as and for the purposes set forth.

16th. The combination, with the barb wire feeding and retracting lever, J, provided with jaws, h and i, one or both movable, of the adjusting screws, o and p, and wedge n, substantially as and for the purposes set forth.

17th. The combination, with the cutters, in a machine for feeding and cutting off wire, beveled or pointed, as shown at 28, of retracting mechanism, whereby the wire is slightly withdrawn before the cutter moves back, for the purposes stated.

18th. The combination of lever, J, and cam, I, of adjusting screw, m, spring 12, sliding head, m, stationary head, K, of the moveable wedge, n, substantially as and for the purposes set forth.

19th. The combination, with feed-rolls, cc', of cams, B" O, Hx, and levers, G' B' and O' substantially as and for the purposes set forth.

20th. The adjustable feed lever, J, constructed and operating substantially as and for the purposes set forth.

21st. In a machine for making barb fence wire or fencing, the combination of mechanism for holding the main wire, and cross or barb wire, substantially as described, of mechanism for coiling the barb wire about the main wire by a rotating and receding motion, substantially as and for the purposes set forth.

22d. The mode or process of forming barb wire fence or fencing by a continuous operation, substantially as shown and described.

THOMAS B. DOOLITTLE AND JAMES M. ELLIS, OF BRIDGEPORT, CONN. IMPROVEMENT IN DEVICES FOR MAKING TABS FOR WIRE FENCES. No. 165,661. Issued July 20, 1875.

The punches and dies for cutting sheet-metal barbblanks, constructed as described, and so arranged relatively to the sheet-metal strip to be operated upon, as that the points shall be cut and bent, substantially as and for the purposes hereinbefore set forth.

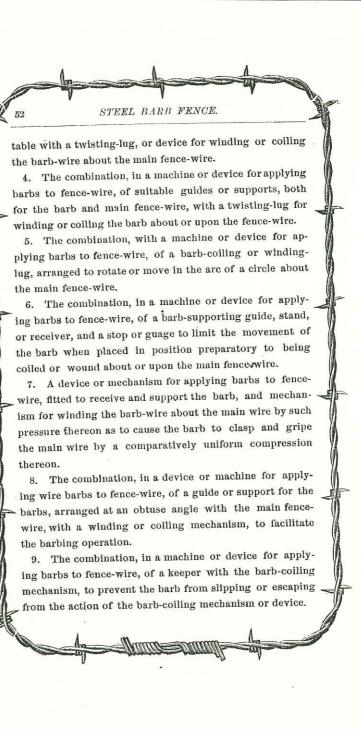
CHARLES KENNEDY, OF HINCKLEY, ILLINOIS. IM-PROVEMENT IN WIRE-FENCE-BARB PINCHERS. No. 180,351. Issued July 25, 1876.

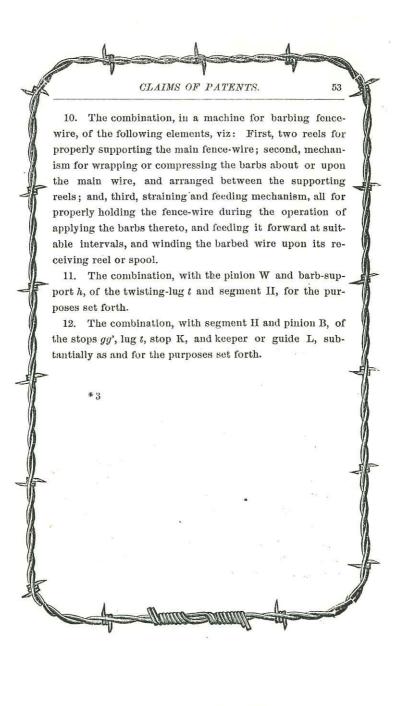
A pair of pinchers, provided with the circular opening b and beveled sides cc, for applying barbs to fence-wire, substantially as described.

PROVEMENT IN MACHINES FOR TWISTING AND SPOOLING BARBED FENCE-WIRE. No. 187, 126. Issued Feb. 6, 1876, 1877.

1. The combination, with twisting-frame E, of the slotted Journal d and d', substantially as and for the purposes set forth.

- 10. The combination, with twister-frame 48, of the skeleton-guide and twisting-rolls 49 and 50, as and for the purposes set forth.
- 11. The combination, with the twister-frame 48, of combined pulley and ratchet wheels 56, double-threaded screwshaft 72, provided with pulleys 76, and sliding table 51, as and for the purposes set forth.
- 12. The combination, with the mechanism for barbing the wire B and feeding the barbed wire B and the wire C, of mechanism for at once both twisting or cabling the wires to form the finished barbed cable-wire or fencing H, and winding the same upon its spool or reel in a uniform and even manner, substantially as described.
- JOSEPH F. GLIDDEN, AND PHINEAS W. VAUGHAN, OF DE KALB, ILLINOIS, ASSIGNORS tO WASHBURN & MOEN MANUFACTURING COMPANY, OF WORCESTER, MASSACHUSETTS, AND ISAAC L. ELLWOOD, OF DE KALB, ILLINOIS. IMPROVEMENT IN BARBING FENCE-WIRES. No. 7,566. Issued Dec. 8, 1874; reissued March 20, 1877.
- 1. The combination of two wire-supporting reels, at suitable distances apart for properly supporting the wire to be barbed, with barb-applying mechanism between the reels, for barbing the wire as it is passed from one reel to the other.
- 2. The combination of mechanism for properly supporting the barb with mechanism for coiling or winding the same around or upon the main fence-wire.
- 3. The combination, in a machine or device for applying barbs to fence-wire, of a barb-support or guide-





SUMMARY OF PRINCIPAL PATENT CLAIMS

ON

BARBS AND BARB FENCING.

Owned and controlled by

WASHBURN & MOEN MANUFACTURING CO.

WORCESTER, MASS., AND

I. L. ELLWOOD & CO.

DEKALB, ILLS.

First. Barbs or Thorns of any style or form in combination with one or more wires. Re-issue Patent No. 6976.

Second. Any Wire Barb bent between its ends around a fence wire. Re-issue Patent No. 6913.

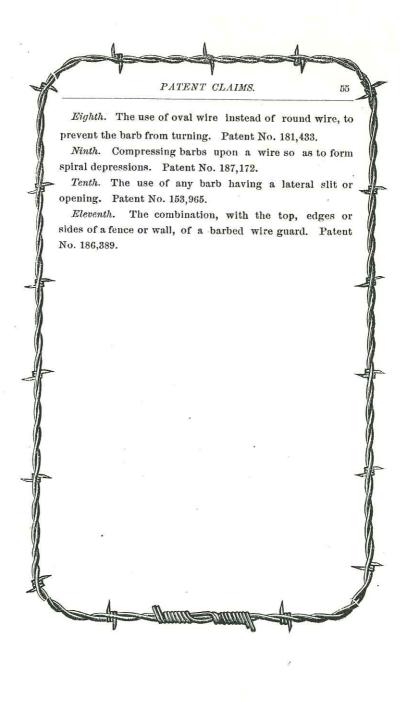
Third. Fixing firmly in place any Barb or Thorn upon a fence wire. Re-issue Patent No. 6902.

Fourth. The use of two Fence Wires in combinatoin with Barbs. Re-issue Patent No. 6902.

Fifth. The twisting of two wires together after barbs are placed on one, so that the barbs will stand out in all directions. Re-issue Patent No. 6902.

Sixth. Wire Barbs with beveled points, Re-issue Patent No. 7036.

Seventh. The use of depressions or bends in a fence wire for preventing barbs from moving longitudinally thereon. Re-issue Patent No. 7136.





SUMMARY OF PRINCIPAL PATENT CLAIMS

ON

MACHINERY

FOR

MAKING BARBS AND BARB FENCING.

Owned and controlled by

WASHBURN & MOEN MANUFACTURING CO.

WORCESTER, MASS., AND

I. L. ELLWOOD & CO.

DEKALB, ILLS.

First. Any device or machine for applying wire barbs to a fence wire, either before or after the wire has been secured to fence posts. Re-issue Patent No. 7566.

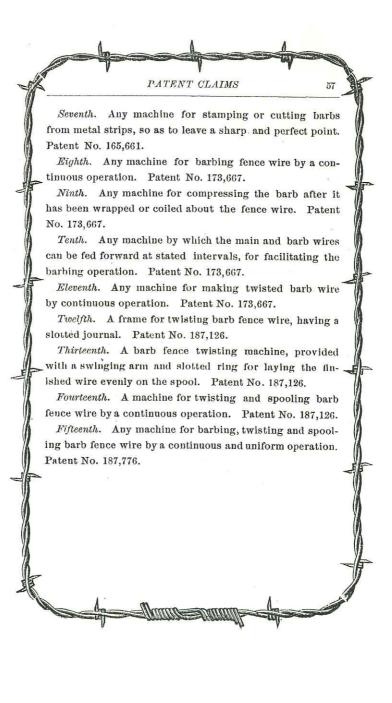
Second. Any Machine having two wire supporting reels with barb applying mechanism arranged between them. Re-issue Patent No. 7566.

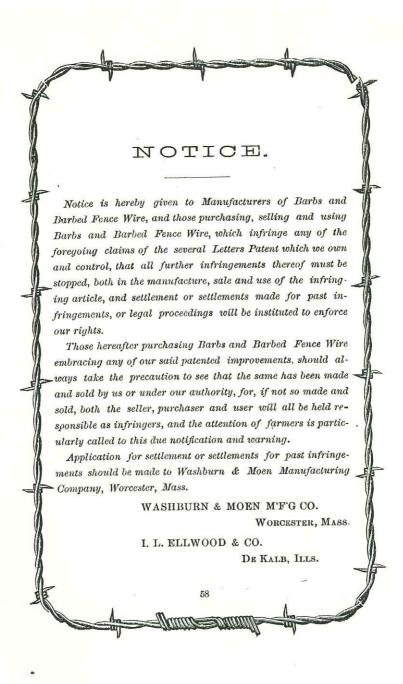
Third. Any machine for automatically barbing the fence wire and coiling it upon a reel. Re-issue Patent No. 7566.

Fourth. A table or support for the barbs while they are being applied to the fence wire. Re-issue Patent No. 7566.

Fifth. A table or support for a fence wire at the points where the barbs are applied. Re-issue Patent No. 7566.

Sixth. Any device by which a barb can be wound or wrapped about a fence wire after the wire has been stretched upon the fence posts. Re-issue Patent No. 7566.





In answer we respectfully

TO THE PUBLIC.

In answer to numerous inquiries with reference to Patent Barb Fencing, we respectfully submit the following:

1. 1st. Barb Fencing must remain rigid and inflexible after being once prop-

1st. Barb Fencing must remain rigid and inflexible after being once properly put up. This can only be insured with at least two main wires, twisted together.

2d. Two wires twisted together afford MUCH MORE STRENGTH, for the same weight, than one wire.

3d. To insure the greatest strength with the least weight, Steel is much superior as a material for the main wires to any other.

4th. The sharp puncture at the moment of contact is what gives Barb Fencing its efficacy, and makes it at once, the dread of every Animal.

5th. Therefore the Barb should be made of round Steel Wire, cut obliquely, which insures the highest degree of Sharpness.

6th. After the essentials of sharpness and stiffness are secured for the Barb, the remaining necessary condition is that of its being fixed firmly upon the fencing, so that it cannot be detached without destroying the Fencing itself. This can only be accomplished by fastening the barbs upon one of the two main wires before they are twisted together.

Having carefully watched the practical use of Barb Fencing under all circumstances, from its first introduction until the present; and in view of the foregoing, we regard the following conclusions as beyond question:

The strongest and most efficient Barb Fencing must be made of two separate and independent Steel wires firmly and evenly twisted together, upon one of which has been fixed at regular intervals a round Steel wire Barb with beveled points, so that while one main wire sustains the Barbs, the other tends to bind them firmly and unalterably in place. It necessarily follows when this is done that the Barb points will *project in every direction* from the fencing.

Barbs presenting four points in a group cannot be effective, as the points will inevitably present themselves in pairs, thus destroying the efficiency of either, the result being to scratch merely and thus invite contact, rather than to puncture and repel.

All Barbs stamped or cut from Sheet or Flat Metal should be avoided, as they cannot be made uniformly sharp enough to warn and drive away the Animal. Also avoid all styles of Barb Fencing where the main Wires are fastened or clamped together by the Barbs, as this tends to destroy the power of the fencing to remain taut and rigid between the posts in all temperatures, which is the great advantage gained by the use of two separate and independent wires twisted together.

IN CONCLUSION:

The Barb Fencing manufactured by us, at Worcester, Mass., and by I. L. Ellwood & Co., De Kalb, Ills., includes all the features demonstrated above as essential.

Any Barbed Wire Fencing, including any of the mechanical features recommended above, not made by us or under license from us, infringes our plain and unimpeached Patents, and subjects the maker, the dealer and the user to damages.

WASHBURN & MOEN M'F'G CO.

DIRECTIONS

FOR PUTTING UP

STEEL BARB FENCING.

DIRECTIONS.

- 1st. The "Main" Posts should be 150 feet from the corner Posts and from each other. The intermediate Posts (i. e. all besides the corner and the Main Posts) should be 5x5 inches square (or equal in strength, whatever the shape) and should be firmly bedded in the ground below fros t.
 - 2d. Mark on each post where each line of fencing is to cross it.
- 3d. Firmly fasten the first end of a spool of fencing to the first corner Post at the highest mark thereon, then proceed to convey the spool the entire length of the proposed fence, allowing the fencing to unwind as the spool proceeds.
- 4th. Before cutting this line from the spool, raise it to its proper place on each main post and to the next corner post, stapling loosely to each of said posts.
- 5th. Draw the line from the starting point to the first main post as straight as convenient with the hands; then at the said main post apply a "Davis Stretcher" and strain rigidly to place. While the line is thus under strain, staple firmly to each intermediate post as well as to the main post, which for the moment is the fulcrum. Repeat, from this first main post to the next, and so on until the next corner post is reached.

REMARKS.

The above directions, as far as the posts are concerned, are for first-class farm Fence.

The Corner Posts and main Posts should be 8 x 8 inches square, (or as strong and stiff as those dimensions would indicate, whatever the shape may be), firmly bedded in the ground and below frost. The corner posts should be braced each way with 4 x 4 inch joist bevelled to fit the post at the place of contact and firmly spiked thereto as high on the post as the upper line of the fencing, and running therefrom at an angle of 45° into the ground, below frost, and kept in place at the bottom by a flat stone or some other material.

Where the appearance of the fence is regarded of importance, all posts between the Corner Posts may be of the same size; in such cases all the straining must be done from the corner posts. In cases where it is desired to observe strict economy, all the Posts may be somewhat less in size than named above.

Where Galvanized Barb Fencing is used, posts should *be painted*; otherwise one set of fencing will outlast half a dozen sets of posts.

Posts should always be sharpened at the top, or left wedge-shaped, to keep tramps and stragglers from gaining any hold at that point.

The posts on each side of a gate or pair of bars must be of same size as corner posts; and be braced and used same as corner posts.

The Spool of Barb Fencing is best carried on an I Iron Bar thrust through the center, and upon which the Spool must revolve freely. Two men can thus conveniently carry a Spool between them. Or if the Fence is to be a long one, and the ground will allow, the spool can be conveyed in the rear of a Box Wagon, allowing the projecting ends of the Iron Bar to rest on the sides of the Wagon.

Barb Fencing in order to be thoroughly efficient should be strained rigidly to place in putting up. There is little danger of straining it too tightly; being composed of two strands twisted together, it adjusts itself between the posts to different temperatures.

The "Davis Stretcher," is a combination of Lever and Steel Pincers, and costs \$3.00 each. It will speedily pay for itself. Where one has an inconsiderable amount of fencing to put up, we or our agents can usually *lend* a Stretcher for the job.

Staples for Hard Wood should be 1 1-4 inches in length; for Soft Wood should be 1 3-4 inches.

The *number of lines* of Barb Fencing to be used must be decided in each case by the special object to be accomplished by the Fence.

One line of fencing; 3 1-2 feet from the ground will turn full sized Cows, Oxen, and Horses.

Two lines of fencing 21 inches from the ground and from each other, will turn Calves and Hogs in addition to the above named.

Three lines of fencing, the lowest 12 inches from the ground, the next 24 inches from the ground, and the third 42 inches from the ground will of course accomplish all named above, and makes a thoroughly good and substantial farm Fence.

Four and five lines of fencing are frequently used when some special object is in view, such as excluding Dogs, Cats, Poultry and other small animals; in which cases the lower lines are placed nearer the ground and to each other than are the upper lines. Say the lowest line 5 inches from the ground, the next 12 inches from the ground, the next 22 inches, the next 48 inches from the ground.

Out of Ten Millions (10,000,000) pounds of Barb Fencing to-day in use, not more than One-Third is composed of more than three lines.

The easiest way to cut Barb Fencing is to nick both wires with the edge of a file, say one-third the diameter of the wires, then by bending the wires sharply at the nick, it will easily part.

It will be observed that foregoing Directions apply more particularly to a single straight piece of fence.

Where a corner is turned, and where there are several loorners, as in enclosing a rectangular lot, the fencing should not be *cut* but passed *around* the corn er post and firmly stapled while under tension; then proceed as from the first.

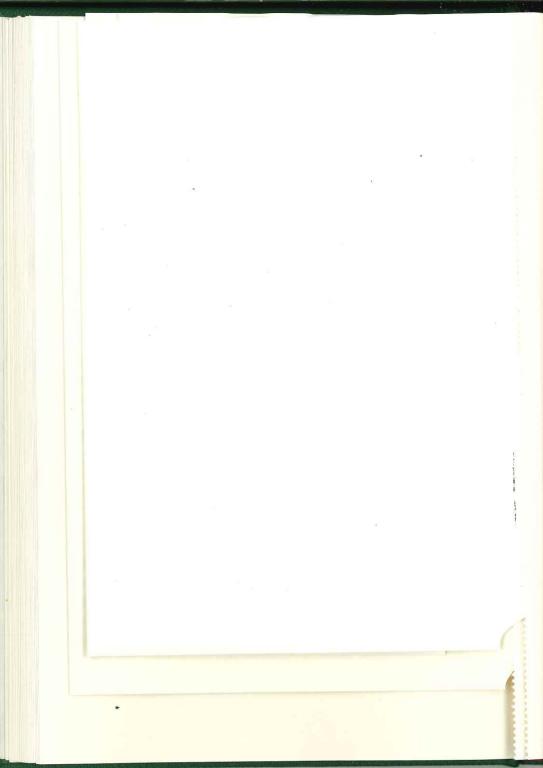
When once this Fencing is seen, a great variety of possible combinations between it and the different styles of Wooden Fences already largely in use is suggested; for instance:

One line of Barb Fencing stretched rigidly along and stapled to an old *shaky* wooden fence 3 1-2 feet from the ground, gives a "new lease of life" to such a fence, and puts it instantly and at very slight expense in good condition and no animal will press against it on the side where the line of Barb Fencing is, &c., &c., &c.

For fuller or any further information regarding Barb Fencing, apply to

WASHBURN & MOEN M'F'G CO.,

WORCESTER, MASS.



The following is fac simile of LABELS put on Barb Fence manufactured under Patents owned and controlled by WASHBURN & MOEN MFG CO. and I. L. ELLWOOD & CO.

MANUFACTURED UNDER PATENTS

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VASIBURN & MOBN

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THE THE POOD & CO

Of DeKALB, ILLS.

PATENTED

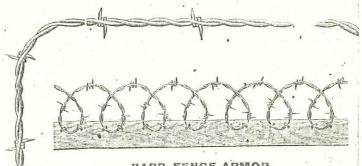
November 17th, 1868. Re-issued, April 4th, 1876.
May 12th, 1874.
Rebruary 8th, 1875.
Roberts 11th, 1868. Re-prang 8th, 1876.
May 12th, 1874.
Ray 12th, 1874.
May 25th, 1874.
May 25th, 1875.
May 25th, 1876.
May 25th, 1876.

December 8, 1874.
July 20, 1875.
February 15, 1876.
February 15, 1876.
August 22, 1876.
February 5, 1877.
February 27, 1877.
March 20, 1877.

August 11, 1874. November 24, 1874. June 8, 1875. January 25, 1876. July 25, 1876.

January 16, 1877.

February 24, 1874.



BARB FENCE ARMOR.



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